



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/648,307	08/27/2003	Hiroshi Takiguchi	029383.52656US	3671
23911	7590	03/28/2005	EXAMINER	
CROWELL & MORING LLP INTELLECTUAL PROPERTY GROUP P.O. BOX 14300 WASHINGTON, DC 20044-4300			MAI, NGOC LAN THI	
			ART UNIT	PAPER NUMBER
			1742	

DATE MAILED: 03/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/648,307	TAKIGUCHI, HIROSHI	
	<b>Examiner</b>	<b>Art Unit</b>	
	Ngoclan T. Mai	1742	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

**A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.**

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on IDS filed 2/6/04.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) 4-6 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 2 is/are rejected.
- 7) ☒ Claim(s) 3 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. _____.   |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>2/6/04</u> .  | 6) <input type="checkbox"/> Other: _____.                                   |

*re*

**DETAILED ACTION**

***Election/Restrictions***

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
  - I. Claims 1-3, drawn to product, classified in class 428, subclass 550.
  - II. Claims 4-6, drawn to method of making, classified in class 419, subclass

2.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions II and I are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the product as claimed can be made by extruding a paste containing metal powder and a binder into a tube and removing the binder to create pores between the metal powder before sintering.

3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification and the search required for Group I is not required for Group II, restriction for examination purposes as indicated is proper.

4. During a telephone conversation with applicants' attorney Herbert Cantor on March 4, 2005 a provisional election was made with traverse to prosecute the invention of group I, claims 1-3. Affirmation of this election must be made by applicant in replying

Art Unit: 1742

to this Office action. Claims 4-7 have been withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Potet (US Patent No. 3,313,622).

Potet discloses sintered porous tube which is made by extruding a paste formed of a metal powder and a binder following by sintering after removing the binder. The tube disclosed has a dimension of 15.3 mm in external and 14.3 mm in internal diameter and a porosity of 45%. The sintered porous tubes therefore would have a thickness of 0.5 mm  $[15.3-14.3]/2$ . The sintered porous tube taught reads on the porous metal structure body of claim 1 regardless how they are made.

*Note that it has been established that a product by process claim is directed to the product per se, no matter how actually made, In re Kirao, 190 USPQ 15 at 17 (footnote 3). See also In re Thorpe, 227 USPQ 964 (CAFC 1985), which makes it clear that it is the patentability of the final product per se which must be determined in a product by*

Art Unit: 1742

*process claim and not the patentability of the process. An old or obvious product produced by a new method is not patentable as a product, whether claimed in a product by process claims or not. Also note that applicant has the burden of proof in such case.*

7. Claim 1 is rejected under 35 U.S.C. 102(e) as being anticipated by Shikata et al.

(Patent No. 6,737,016)

Shikata et al. discloses a sintered porous bearing body formed by sintering a green compact of metal powder. Shikata discloses the body having a tubular shape with a dimensions of a 10 mm bore diameter, a 16 mm outer diameter and a 10 mm length and a density ratio of 80% which is equivalent to a porosity of 20% by volume, see Example 1. The tubular shape body taught has a single cavity and with the dimension disclosed has a thickness of 3 mm  $[(16-10)/2]$ . The sintered porous bearing body taught by Shikata et al. read on the porous metal structure body of claim 1.

### ***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shikata et al. in view of Causley (US Patent No. 2,695,231).

Art Unit: 1742

Shikata et al discloses the claimed porous sintered structure body substantially as claimed. The difference between Shikata is that Shikata et al does not teach a sintered body having a more than 50% by volume porosity formed in the cavity.

Causley discloses a bearing of porous material having a permeable cellular or honeycomb space within the bearing walls with a coarser porosity than the porosity of the bearing walls, col. 1, lines 27-36. The permeable cellular or honeycomb space taught is formed of sintered powdered iron, see col. 3, line 86 to col. 4, line 21. Causley teaches that the permeable cellular not only strengthens the outer and inner bearing walls portion on opposite sides of the cellular reservoir but also facilitate the filling of oil in the reservoir by capillary attraction without encountering air bubble difficulty. See col. 2, line 59 to col. 3, line 9.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the sintered body of Shikata et al. by providing a permeable cellular or honeycomb space in the cavity thereof in order to provide a stronger bearing with a larger lubricant capacity than the same space would possess if of the finer porosity of the bearing walls.

As for the porosity of the permeable cellular or honeycomb space, Causley teaches that it has higher porosity than the bearing wall. Since the bearing wall taught by Shikata et al has a porosity of between 15-25% (density 75-85%), the porosity of the permeable cellular when employed in the sintered body Shikata et al is expected to be higher than 25%. Determination of an optimum or a preferred workable porosity to provide structure support and desirable lubricant capacity is within the level of the

skilled in the art and would have been obvious. “[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable range by routine experimentation.” See *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955); *In re Hoeschele*, 406 F.2d 1403, 160 USPQ 809 (CCPA 1969); *Merck & Co. Inc. v. Biocraft Laboratories Inc.*, 874 F.2d 804, 10 USPQ2d (Fed.cir), cert. denied, 493 U.S. 975 (1989); *In re Kulling*, 897 F.2d 1147, 14 USPQ2d 1056 (Fed. Cir. 1990); and *In re Geisler*, 116 F.3d 1465, 43 USPQ2d 1362 (Fed. Cir. 1997).


10. Claim 3 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Claim 3 is patentable because there is no teaching or reason to form a light metal alloy around the sintered body taught by Shikata et al alone or in view Causely since the sintered body already has resin impregnated therein.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ngoclan T. Mai whose telephone number is (571) 272-1246. The examiner can normally be reached on 9:30-6:00 PM Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 1742

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Ngoclan T. Mai  
Primary Examiner  
Art Unit 1742

n.m.